

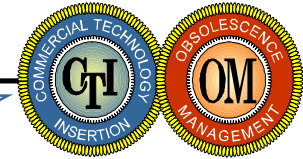


COMMERCIAL COMPONENT USE IN MILITARY SYSTEMS

PARTS OBSOLESCENCE WORKSHOP

Impact of Commercialization on Parts Obsolescence

LOCKHEED MARTIN
Electronics & Missiles, Orlando FL



Commercial Technology Insertion

Need for Commercial Microcircuits

Strategies for Part/Manufacturer Selection

Reliability Considerations



Obsolescence Management

Market Driven Environment

Risk Mitigation Strategies



Standardization

Technology Roadmaps

Parts Management for 21st Century

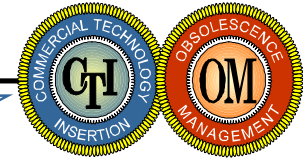


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Need for Commercial Microcircuits

✓ ***DRIVERS***

*Availability of packaging/technology to meet
new program performance requirements
Affordability - FMS considerations*

✓ ***PLAN FOR CHANGE***

*Supplier Management
Performance/Reliability Modelling
Open Architecture Design*

✓ ***CHALLENGES***

*Increased Obsolescence Risk at Piece-Part Level
No Verified Models for Long Term Dormant Storage
Contractor Responsibility for Supplier Certification*

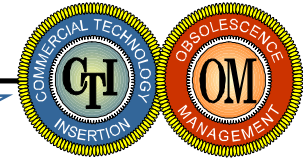


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Technical Considerations

ADVANTAGES

Higher Performance Available - 70% More Functions
Higher Density Packaging
Superior Mechanical Durability
Lighter Weight
Compatible with Automated Assembly Processes

DISADVANTAGES

Higher Thermal Resistance
Reduced Temperature Range Available
Non Hermetic
Greater Risk to Obsolescence
Manufacturers Will Not Certify Performance Outside Limits

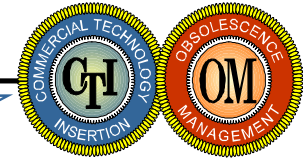


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Affordability

- ✓ Reduction in DoD Budgets Focus Emphasis on Unit Cost
- ✓ Foreign Military Sales Increasing to Maintain Market Share
- ✓ Cost Effective Alternative to Redesign/Emulation for Obsolescence

<i>Part Type</i>	<i>Military Part Cost (\$)</i>	<i>Commercial Part Cost (\$)</i>
Discrete Logic	5	1
PAL	25	8
FIFO	80	12
1M SRAM	50	20
1M Flash Memory	60	8
12 bit DAC	250	60
128 macrocell EPLD	330	90

Manufacturers Streamlining Processes to Minimize
Military Part Cost Escalation - Eclipsed by
Commercial Part Cost Reductions